

CANADA

(DEPARTMENT OF TRADE AND COMMERCE)

DOMINION BUREAU OF STATISTICS

GENERAL STATISTICS BRANCH



THE NATIONAL INCOME

OF

CANADA

Published by Authority of the HON. H. H. STEVENS, M.P.,
Minister of Trade and Commerce.

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P R E F A C E

The present study of the national income of Canada, by Mr. S.A. Cudmore, M.A. (Oxon.), F.S.S., F.R. Econ. Soc., Chief of the General Statistica Branch and Editor of the Canada Year Book, Dominion Bureau of Statistics, proceeds in the main along the lines of the annual Survey of Production issued by the Bureau, but includes also estimates of the production of those departments of the national economic activities whose product does not take the form of "form" utilities. In arriving at the production of these remaining branches, use has been made of the Census of Distribution of 1930 and of the record of earnings of those engaged in professional and personal service as supplied by the great majority of them at the decennial census of 1931.

In the second place, a supplementary study is made, taking as a starting point the \$3,225,000,000 spent by the Canadian public for retail purchases in 1930. Here, partly on the basis of amounts known to have been spent in other ways than in retail purchases in 1930, an estimate is made of total sums expended, including savings spent for permanent improvements, in the year 1930. The figure so obtained compares very closely with that obtained by the former method.

Thirdly, the aggregate of the earnings of wage earners (including salary earners), as supplied by individual wage and salary earners to the census enumerators at the decennial census of 1931, is taken to be representative of the earnings of all gainfully occupied Canadians in the twelve months preceding the date of the census, which was taken as of June 1, 1931. The result, together with a moderate addition of \$25 per gainfully occupied person for earnings not in the form of cash and for casual earnings of persons not ordinarily gainfully occupied, such as school children and students in vacation time, is taken to be the total of the service or "effort" income of the Canadian people in the twelve months prior to the census. Then, taking Professor W. I. King's estimate for the United States of the relation of property income to service or "effort" income, a figure is arrived at for property income in the same period, allowance being made for that part of property income which goes outside the country. While the grand total net national income of Canada as thus arrived at for the twelve months prior to the census is considerably lower than that previously arrived at for the calendar year 1930, this is entirely in accordance with the figures already published in the Survey of Production, showing a decrease of some \$1,150,000,000 in aggregate production between the calendar year 1930 and the calendar year 1931. Indeed, the difference in this estimate as compared with the other two is almost exactly five-twelfths of the difference for the full year, which was what would be expected on account of the five month difference in the periods covered.

Thus the main conclusion of the investigation is to establish the substantial accuracy of the assumption that the three-eighths of the gainfully occupied Canadians whose activities are not accounted for in the Survey of Production are quite as productive as the other five-eighths, the dollar results of whose activities are included in the Survey of Production as previously published. It is felt that in so far as the determination of the amount of the national income is concerned, considerable confidence can be placed on the above assumption, although there is no doubt a tendency for the proportion of producers of "form" utilities, the results of whose efforts are included in the Survey of Production, to diminish from census to census. It is not clear how far this general tendency has been accelerated or retarded by the recent depression.

In the year 1930, with which the present study is principally concerned, the total amount of income falling under the observation of the Income Tax Branch and paying income tax within the fiscal year ended March 1932, was \$992,600,000, or approximately one-fifth of what would appear to have been the aggregate national income of that year. This income is stated to have been that of 133,621 individuals and 6,010 corporations, so that it would appear that about six per cent of the families of Canada are affected by income tax.

R. H. Coats,

Dominion Statistician.

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THE STATISTICS OF THE NATIONAL INCOME OF CANADA

"The annual labour of every nation is the fund which originally supplies it with all the necessaries and conveniences of life which it annually consumes, and which consist always either in the immediate produce of that labour, or in what is purchased with that produce from other nations."--Adam Smith. This is perhaps the earliest modern definition of "national income", and is still among the best, when it is interpreted in accordance with modern knowledge regarding the balance of international payments and the necessity of keeping productive equipment in running order. It must also be remembered that while the national income consists in goods and services of the most varied kinds, its total amount can be stated only in terms of money.

Again, the dean of recent English-speaking economists, Professor Alfred Marshall, describes the National Income very briefly as "the net sum-total of things and services produced." -- a concept which like the former requires for statistical purposes to be interpreted as the money value of the things and services produced. In this connection, Sir Josiah Stamp says that three reservations are necessary. In the first place, there is the question of whether goods produced within a country are owned within the country; if not, they do not form part of the national income. The second reservation is that only goods and services that are exchanged or are capable of exchange really count in the national income. Thirdly, the concept of "services" is confined to those rendered during the year, and a payment of interest or pensions out of the proceeds of taxation, for which the recipient renders no current service, cannot be included. This latter point is of importance where, as in the United Kingdom, the total money value of the national income is estimated mainly on the basis of income tax returns. It is of little significance in Canada, where the money value of the national income is estimated mainly on the basis of the value of production, in accordance with the principle laid down by Adam Smith in the above quotation from the commencement of the Wealth of Nations and later by Alfred Marshall.

Again, in the article on National Income in the new Encyclopaedia of the Social Sciences, Simon Kuznets says, "The National Income may be defined provisionally as the net total of commodities and services (economic goods) produced by the people comprising a nation; as the total of such goods received by the nation's individual members in return for their assistance in producing commodities and services; as the total of goods consumed by these individuals out of the receipts thus earned; or, finally, as the net total of desirable events enjoyed by the same individuals in their double capacity as producers and consumers. Defined in any one of these fashions national income is the end product of a country's economic activity, reflecting the combined play of economic forces and serving to appraise the prevailing economic organization in terms of its returns. Being thus a summary and appraisal notion rather than an analytical entity, national income demands statistical measurement."

The Difficulty of Measuring National Income

The precise statistical measurement of the national income is, however, a matter of insurmountable difficulty, and the most indefatigable research into all the relevant statistics, in order to establish a figure of national income, must always leave a considerable margin of error. Indeed, it is no easy matter even for an individual to establish an accurate money figure as representing his total income, especially where he has to include in that total income, besides his cash income, an allowance for the rental value of his (owned) house, and his durable belongings therein together with an allowance for the money value of the commodities produced and consumed within the family, (such as eggs and garden produce) and of the services, ordinarily bought and sold, but rendered gratis within the family circle.^x Yet this is the only way of obtaining the total income of the family. While such income, not received directly in money, but in commodities produced and services rendered, is not, except for house and furniture rent, an important percentage of the family income in most urban families, it constitutes a very important part of the income of most rural families, who to a much larger extent consume the commodities which they themselves produce. For this reason, indeed, comparisons between the incomes of urban families and rural families are often misleading, through not allowing for the non-money income of the latter. Certainly most people never think of their non-money income as income at all, and would never dream of putting the rental value of their owned homes into their income tax returns. Indeed, the income tax authorities of Canada do not expect them to do so.

^x The recent United States government publication, "National Income 1929-32" leaves out of account, first, the services of housewives and other members of the family; secondly, the services of owned durable goods such as houses, automobiles, furniture; and thirdly, earnings from odd jobs.

With respect to the first it says, "It was considered best to omit this large group of services from national income, especially since no reliable basis is available for estimating their value. This omission, unavoidable though it is, lowers the value of national income measurements as indicators of the nation's productivity in conditions of recent years when the contraction of the market economy was accompanied by an expansion of activity within the family."

In respect of the second item it says, "It would be erroneous to treat the net income from durable goods as if it were equivalent to investment income The net yield of all durable goods owned by the households was disregarded."

In respect of the third item, it says, "The available data permit only a most inadequate estimate of the earnings from odd jobs and these earnings are largely omitted from the national income totals presented in this report. This omission results in our estimates somewhat exaggerating the relative decline in national income from 1929 to 1932; if, as appears from all indications, the number of persons engaged on odd jobs has increased materially during the depression, odd earnings from these jobs have either increased or failed to decline as deeply as the other constituent parts of the national income total."

Our own practice is contrary to the United States practice in all these points except in respect of the services of housewives. Eggs or garden stuff produced on a city lot are certainly elements in the national income, and a boy who delivers papers or runs errands in the morning or evening to help out the family income is rendering an economic service. It appears desirable to make reasonable allowance for such production of commodities or rendering of services in any estimate of the national income.

Again, it is possible for an individual who has assets convertible into cash, to overspend his income by drawing upon his assets. It may be possible for a youth who succeeds to a family property to spend the whole value of that property in addition to his earned income in a single year, and thus find himself penniless at the end of the year. He is not necessarily foolish for so doing, since he may have invested the property in taking a course of training which has increased his earning power and his value to the community. Or again, he may have been forced by unemployment to draw upon his reserve resources, and this may account for his expenditure being greater than his income. In fact, in periods of depression and unemployment, many people must be realizing upon their assets in order to provide for their ordinary maintenance. It is obvious that if we were to estimate the income of such people on the basis of our knowledge of their expenditure, we should be in error.

Any difficulties experienced in expressing the total income of an individual as a single figure are multiplied a million-fold in any attempt to express the total of the national income as a single figure. The individual and corporate incomes which are to be combined into this grand total without duplication, are of such a heterogeneous character that any figure which may be given as the grand total of the national income must include some margin of error. For example, the total of the national income must include the rental value of owned houses, and the value of the commodities raised on the 728,000 farms of Canada and consumed on the farms where they are produced, the value of the flowers raised on a million private gardens, and the value of innumerable services which in special cases are performed within the family, or by the individual for himself, although more ordinarily bought and sold. Yet the labour of the house-wife, performed in her own house, must be left out of account as one of the imponderables, however valuable it may be in fact. For the estimate of the national income to be of any practical use must be based upon the conventions and practices of the existing economic system.

Again, fluctuations in the general level of prices, which have been so great in the past few years, have necessarily affected the money value of the national income. In these circumstances, it is absolutely essential that any estimate of the national income should be definitely stated as for a particular year, so that the national income for each year may be related to the price levels prevailing in that year and corrected by the price levels of that year. Thus, when the official index number of wholesale prices is taken to correct the estimate of the money value of the national income for the decline of prices, it is found that \$66.70 bought on the average as much in commodities in 1932 as \$95.60 bought in 1929. Then, if the money value of the national income had declined by one-half in these three years, the correction for the drop in prices would reduce the decline in the "real" national income of commodities and services to 28.3 per cent, on the assumption that the prices of services rendered declined proportionately with the prices of commodities included in the index number of wholesale prices. Thus on the assumption that the money value of the national income in 1932 was only one-half of that of 1929, the "real" national income would be nearly 72 per cent of that of 1929. Much might be said here on the effect of falling prices in discouraging the actual production of commodities and the rendering of services, thus reducing the real national income, and conversely on the effect of rising prices in stimulating the actual production of commodities and rendering of services and thus increasing the real national income.

Further, while it seems best that the national income of Canada should be estimated primarily on the basis of the value of production as published in the annual Survey of Production of the Dominion Bureau of Statistics, it is expedient that the figures so obtained should be checked up with figures arising out of the observation of other sides of the national life, such as the figures of retail sales arising out of the census of distribution and the figures of earnings supplied to the census enumerators at the census of 1931. These figures, it is felt, are not so comprehensive as those of the

census of production, especially since the figures of retail sales may represent purchases in excess of current production, though this is far less likely to occur in the case of a nation than in that of an individual. However, these figures may be used as checks upon the figures obtained from the Survey of Production.

Finally, it is to be remembered that the figure of national income, when related to the existing price levels, is the most important as well as the most comprehensive of all statistics, since it is the best possible test of the material well-being of a nation, and, when divided by the population that is maintained out of it in order to secure a per capita figure, the best possible test of the general standard of living and of comfort prevailing in the country under consideration. Again, the percentage which the total of taxation bears to the total national income is the best recognized measure of the solvency of a nation. Thus Shirras, on pages 646-7 of his book, *The Science of Public Finance*, gives figures for various nations including Canada, and also discusses this question at pages 102-105 of the same volume.

Thus the statistics of national income constitute the coping stone of any national statistical system. Indeed, the quality and the adequacy of the statistical system of any country may be best judged by the facilities which it affords for securing as close an approximation as possible to the aggregate of the national income and to the distribution of that income among the different parts of the country and among the various classes of the population.

The Measurement of National Income in Canada

In Canada, the principal method of obtaining an approximation to the aggregate of the national income has hitherto been that suggested by Adam Smith, namely, making an annual record of the values created by the leading industries as disclosed by our Census of Industry, which applies to all industries that change the form of the materials which they use in the productive process. Then, having a record of the values created by the five-eighths of the gainfully occupied or active population of Canada, which is engaged in such work, an estimate is made for the production of the remaining three-eighths, who are occupied with the creation of "place", "time" or "possession" utilities, or with the rendering of services, on the assumption that they are equally productive with the included five-eighths in the broader sense of the term "production". This estimate may be supported with an immense quantity of statistics indicative of production in the transportation and communications industries, in wholesale and retail trade and in finance, as well as in personal and professional service. In this connection, the previously existing statistics of national income have been reinforced by two large compilations made in connection with the decennial census of 1931 - firstly, the census of distribution made as for 1930, and covering wholesale and retail trading establishments together with service establishments, and secondly, the record of personal earnings of all wage and salary earners in Canada in the twelve months ended May 31, 1931. The former of these records, in its total of retail trade, covered an enormous sample of the spendings of the people of Canada, while the latter included a very large percentage of their earnings. Thus it has been possible in the present study to check up on national income statistics based upon production by statistics of spendings and statistics of earnings. This is the first time that this has been possible, and the results are strongly confirmatory of the accuracy of the estimates formerly made. In this connection, use has been made for comparative purposes of the estimates of the national income of the United States made by the National Bureau of Economic Research, as well as of the United States census of distribution covering 1929, in order to establish a relationship between expenditures in retail trade in each country and total national income.

In view of the fact that the Canadian national income statistics are ordinarily based upon production as ascertained at the annual Census of Industry, it has not been considered necessary to follow the example of the latest United States study in differentiating between income produced and income paid out, but to concentrate attention upon income produced. Doubtless it is possible for a country as for an individual to spend more than it can afford by drawing upon its capital and letting its productive equipment run down, as Russia did in the early days of the Bolshevik régime. It is also true that a business concern may in times of prosperity accumulate reserves and in times of depression go on paying bond interest and shareholders' dividends out of these reserves. "In general", says the latest United States study of national income, "the difference between national income produced and national income paid out, is that the former does and the latter does not include savings by business establishments." Existing Canadian statistics do not enable us to make any estimate of the savings of business establishments, so that our estimate, as already stated, is concerned with national income produced.

The industries concerned with the production of form utilities employed in 1931 approximately five-eighths of all gainfully occupied Canadians. Then, on the assumption that the remaining three-eighths of the gainfully occupied Canadians who are engaged in the transportation and communications industries, in wholesale and retail trade, in finance and in personal and professional service, are proportionately as productive on the average as those who engage in the production of form utilities, we attain a total figure of what labour, assisted by capital, has presumably been able to produce in the course of a calendar year. This figure has for the past twelve years been published in the Dominion Bureau of Statistics' Annual Survey of Production, and in the Canada Year Book.

On the basis of the annual Census of Industry and the occupational distribution of the population as ascertained at the decennial censuses of 1921 and 1931, the grand total value of the national production in each year from 1920 to 1931 inclusive has been approximately estimated as follows:

	\$
1920	5,523,000,000
1921	4,215,000,000
1922	4,520,000,000
1923	4,696,000,000
1924	4,643,000,000
1925	5,178,000,000
1926	5,600,000,000
1927	6,101,000,000
1928	6,342,000,000
1929	6,072,000,000
1930	5,150,000,000
1931	4,000,000,000

It may be well to add that these figures are necessarily based upon the value and the purchasing power of the dollar as in each of the years in question. Thus the drop in the money value of production in 1921 as compared with 1920 is much greater than the decline in quantity of production, and similarly the decline in value between 1929 and 1930 or 1931 is much greater than the decline in the physical quantity of products.

The net production of the five-eighths of the Canadian people who were engaged in what economists call the creation of form utilities was given in 1930 as \$3,216,746,735, divided by industries as follows:

Division of Industry	Net Production \$
Agriculture	758,791,743
Forestry	303,145,169
Fisheries	47,804,216
Trapping	9,875,955
Mining	279,873,578
Electric Power	126,038,145
Total Primary Production	1,525,528,806
Construction	297,046,750
Custom and Repair (a)	85,200,000
Manufactures (b)	1,761,986,726
Total Secondary Production (b) .	2,144,233,476
GRAND TOTAL	3,216,746,735

(a) Statistics of Custom and Repair Shops, including custom clothing, dyeing and laundry work, boot, jewellery, automobile and bicycle repairing, and custom and repair work by foundries were not collected after 1921. The totals from 1927 to 1930 were estimated according to the percentage change in the data for manufacturing.

(b) The item "Manufactures" includes dairy factories, sawmills, pulp mills, fish canning and curing, electric power production, shipbuilding and certain mineral industries, which are also included in other headings above. The duplication amounting in 1930 to a net of \$453,015,547, is eliminated from the grand total.

The above net production of five-eighths of the gainfully occupied population of Canada in 1930 has been given by provinces as follows:

	1 9 3 0 Net Value \$	Percentages of Total Net Value
Prince Edward Island	16,635,118	0.52
Nova Scotia	114,402,720	3.56
New Brunswick	78,772,589	2.45
Quebec	892,076,349	27.73
Ontario	1,380,458,865	42.91
Manitoba	142,170,105	4.42
Saskatchewan	134,134,319	4.17
Alberta	184,659,449	5.74
British Columbia	268,972,091	8.36
Yukon	4,465,130	0.14
GRAND TOTAL	3,216,746,735	100.00

The details of the net production due to the labour of five-eighths of the gainfully occupied population of Canada engaged in the production of form utilities, assisted by their capital equipment, in 1930 are as follows:

DETAILED STATEMENT OF THE NET VALUE OF PRODUCTION OF "FORM" UTILITIES
IN CANADA DURING 1930, BY ITEMS.

Classification	Net Production 1930
\$	
Agriculture -	
Field Crops	514,041,000
Fruits and Vegetables	40,405,743
Maple products	5,251,000
Tobacco	7,058,000
Grass and clover seed	2,482,000
Honey	2,584,000
Flax Fibre	371,000
Total Field Husbandry	572,192,743
Farm Animals	166,630,000
Wool	2,311,000
Dairy Products -	
Dairy Butter	20,710,000
Creamery Butter	56,670,000
Home Made Cheese	64,000
Factory Cheese	18,090,000
Miscellaneous Factory Products	21,305,000
Milk Consumed fresh or otherwise used	155,619,000 1/
Poultry and eggs	95,227,000
Fur Farming -	
Pelts	3,096,000
Animals	1,829,000
Total Animal Husbandry	186,599,000 2/
Total Agricultural Production	758,791,743
Forestry -	
Logs and bolts	75,563,041
Pulp wood	67,529,612
Hewn railway ties	5,038,899
Fuel	43,786,064
All other forest products	14,935,878
Total Forestry Operations	206,853,494
Saw mill products	48,186,223
Pulp mill products	48,105,452
Total Milling Operations	96,291,675
Total Forestry Production	303,145,169

1/ Three per cent for wastage was deducted from value of milk consumed fresh.

2/ Cost of feed is deducted from the gross for animal husbandry.

DETAILED STATEMENT OF THE NET VALUE OF PRODUCTION OF "FORM" UTILITIES
IN CANADA DURING 1930, BY ITEMS - Continued.

Classification	Net Production 1 9 3 0 \$
Fisheries -	
Fish sold fresh by fishermen	13,823,526
Sales to canning and curing establishments	15,939,137
Fish domestically cured	1,007,382
Fish canning and curing establishments (value added)	17,034,171
Total Fisheries Production	47,804,216
Trapping -	
Fur Production (Wild Life)	9,875,955
Mineral Production -	
Smelting	55,635,664
Other metallics	87,108,100
Fuels	68,184,485
Salt	1,694,631
Other non-metallics	13,523,233
Clay products	10,593,678
Cement	17,713,067
Lime	4,038,698
Other structural materials	21,382,122
Total Mineral Production	279,873,578
Electric Light and Power (a)	126,038,145
Total Primary Production	1,525,528,806
Construction -	
General construction	297,046,750
Shipbuilding	-
Total Construction	297,046,750
Custom and repair	85,200,000
Manufactures -	
Vegetable Products	314,513,326
Animal Products	132,212,467
Textiles	177,250,868
Wood and paper	368,350,618
Iron and steel	288,032,111
Non-ferrous metals	138,720,310
Non-metallic minerals	109,606,153
Chemicals	71,804,599
Miscellaneous including Central Electric Stations	161,496,274
Total Manufactures (b)	1,761,986,726
Total Secondary Production	2,144,233,476
GRAND TOTAL (b)	3,216,746,735

- (a) This amount is exclusive of duplication involved in purchases of power by reporting companies.
- (b) The item "total manufactures" includes the following industries which are also shown elsewhere, the amount of the duplication being deducted from the grand total,-

In connection with the manufacturing industries of the country, it may be observed that fuel used in the manufacturing process is not usually considered as one of the materials of industry. Consequently, it appears necessary for the present purpose to deduct from the manufacturing total and from the grand total of production of form utilities, the amount of \$56,518,747, being the value of fuel used in the manufacturing industries of Canada in 1930. In so far as this fuel is produced in Canada, its value at the point of use in manufacture has already been allowed for in the mining or the forestry division of primary production. In so far as it came from outside of Canada, it has had to be purchased with exports of Canadian produce. In either case, it should be considered as a deductible item from the figure previously given as being the net value of production of "form" utilities. The same principle applies in the case of purchased power, which cost the manufacturers of Canada \$39,836,209 in 1930 and in most cases probably included light as well. Thus the total deduction on these two scores is \$96,354,956, bringing the net recorded total of commodity production in the sense of the production of "form utilities" down to \$3,120,000,000, which will hereafter be accepted as a basis for the further discussion.

On the assumption that the remaining three-eighths of the gainfully occupied population were as productive as the five-eighths, the grand total recorded value of the commodities produced, transported and finally sold to the ultimate consumer, plus the value of the services rendered by those engaged in professional and personal service, would reach \$4,992,000,000 in the calendar year 1930 or in round figures \$5,000,000,000.

In view of the ease with which labour in Canada passes from one field of effort to another, it is felt that the figure of \$5,000,000,000 fairly represents the recorded money value of the commodities produced and the services rendered in Canada in 1930^x. The \$1,872 millions added to the figure of \$3,120,000,000 already given includes the value of the services of our transportation and communications activities involving the addition of "place utilities" to the already existing "form" utilities, the value of our whole system of wholesale and retail distribution of commodities involving the addition of "possession utilities" to the preceding, the value of the activities of our financial institutions, and last but not least, the value of all professional and personal services. The justification for this addition of \$1,872,000,000 may now be considered.

In addition to the net production of "form utilities" amounting to \$3,120,000,000, as stated above, figures are available indicative of the total of production in certain other spheres of the national activities. Thus it may be reasonably asserted that the gross productive value of the transportation and communication activities

FOOTNOTE - Continued.

(b) The item "total manufactures" includes the following industries which are also shown elsewhere, the amount of the duplication being deducted from the grand total,-

	1930
Dairy factories	43,541,731
Sawmills and pulp mills	181,868,214
Fish canning and curing	11,891,819
Shipbuilding	-
Mineral industries	89,675,638
Electric power	126,038,145
Total	453,015,547
Manufactures, n.e.s.	1,308,971,179

^xThe grand total, including an estimate for unrecorded production, is given later on.

of the country is equal to the gross earnings of the agencies of transportation and communication. Now the earnings of steam railways in 1930 amounted to \$454,231,650, of electric railways to \$54,719,259, of express companies (less the amount paid to the railways for express privileges) to \$11,972,121, of canals (fiscal year ended March 31, 1931) \$1,026,670^x, of Canadian National Steamships, \$5,164,903, of Canadian National (West Indies) Steamships, \$3,792,694, of telegraph systems, \$14,264,997, of telephones, \$69,420,459, of the post office, which is really an industry, in the fiscal year ended March 31, 1931 (gross earnings) \$37,468,252 - or a grand total of \$652,061,005 for the activities of which full returns are available. Figures showing the earnings of private shipping concerns (except for gross earnings Canada Steamships, Limited, 1930, \$11,503,509 and of Harbour Commissions, ten of which had aggregate gross receipts of \$7,936,467 in 1930), are not available. However, the recorded figures here included as the total of transportation and communication earnings in 1930 or its nearest fiscal year amount to a total of \$671,500,987. The grand total, including the earnings of the C.P.R. on its ocean service and of other ocean shipping, may be estimated at \$690,000,000. Of course in carrying on these services the transportation and communication agencies of Canada consume a large quantity of goods previously produced within the Dominion or imported and paid for by exports, so that the above figures must be regarded as gross. The following is a partial statement of cost of materials used in these industries in 1930:

Steam Railways	\$ 50,766,665
Electric Railways	2,154,378
Telegraphs	3,074,883
Telephones	1,678,214 (Poles only)
Post Office, fiscal year 1931	1,633,368
Canals, fiscal year 1931, excluding contracts	1,097,535
	<u>\$ 60,405,043</u>

The distributing agencies of the Dominion include wholesale and retail traders who facilitate the placing of commodities in the hands of the ultimate consumer and thus create "possession" utilities. The Census of Distribution for 1930 collected statistics showing the wages and salaries paid and the other expenses incurred by such establishments in that year, and it must be presumed that their aggregate contribution to production was at least as great as their total expenses, though there may be some doubt as to whether some of the establishments included in the Census of Distribution had not already been included in the Census of Manufactures and therefore in the production of form utilities. Leaving aside this point for the moment, the results of the Census of Distribution were in this respect the following:

Retail stores to the number of 74,366, with aggregate sales of \$2,356,368,500, reported a total wage bill of \$231,497,900, or, with allowances for estimated value of proprietors' services, of \$316,062,700 and all other expenses of \$249,863,600. The wages bill, inclusive of proprietors' remuneration, was therefore 13.42 per cent and the other expenses 10.60 per cent of the net sales. Taking the same percentages of expenses for the stores which made no reports of wages or other expenses, it may be assumed that the total expense of doing business for all retail stores in Canada in 1930 was 24.02 per cent of \$2,753,319,900, or \$661,347,400, which may be considered as a minimum figure of the contribution of retail trade to the national production or the national income in 1930.

Retail service establishments to the number of 18,452, reporting their wage costs and other expenses, doing a quite different kind of business from retail stores, reported total receipts of \$194,419,200 in 1930, while their total wage cost, inclusive of

^xCanals are the most part "free goods" in Canada.

employers' remuneration, was \$72,660,000 and all their other expenses aggregated \$71,881,100, or 37.37 per cent and 36.97 per cent, respectively, of total receipts. Applying the aggregate percentage of 74.34 to the grand total receipts of service establishments (including establishments not reporting wages and other expenses) amounting to \$248,555,900, we have a grand total of expenses of retail service establishments amounting to \$184,736,000.

Operating expenses of wholesale establishments proper, amounted to 13.48 per cent of their sales, but did not include proprietors' salaries, which have been estimated to bring the total up to 14.22 per cent, equivalent on total sales of \$1,111,319,200 to \$158,029,590.

Other wholesale establishments had expenses amounting to 7.30 per cent of sales, or including an estimate for proprietors' salaries, 7.58 per cent of sales. On their total sales of \$2,213,891,100 this amounts to \$167,812,945.

Thus the grand total expenses of all distributing establishments in the calendar year 1930 amounted to no less than \$1,171,925,935 or in round figures \$1,172,000,000.

Among the wholesalers other than wholesalers proper, however, a large factor is manufacturers' sales branches, selling goods to the total value of \$556,530,300. It is not clear how far such sales branches are already included in the reports to the Census of Manufactures, nor is it clear how far the expenses of manufacturers' agents are so included. There is also to be remembered the fact that in 1930 prices were on the down-grade and inventories, even if physically as large, were declining in value. On the whole, it appears reasonable to assume that the total contribution of the distributing agencies to the national income of Canada in 1930 was not less than \$1,000,000,000.

In the finance group of industries there were altogether 92,293 persons, 67,319 males and 24,974 females, gainfully occupied in 1931. Of these, 53,882 wage-earning males and 24,388 wage-earning females reported earnings of \$93,241,600 and \$21,425,100 respectively in the twelve months preceding the census. On the basis of the conservative estimate that the males and the females who were not wage-earners earned only as much in this period as the reporting wage-earners of each sex, the total earnings of those gainfully engaged in financial enterprises were \$138,433,957 in the twelve months previous to the census. They would have been substantially higher in the calendar year 1930 - say \$142,000,000. This would indicate a total production of financial institutions amounting to at least \$200,000,000 in 1930. After meeting their wages and overhead expenses, the chartered banks of Canada alone earned recorded profits amounting to \$26,715,583 in their business years ended 1930. Life insurance companies paid \$3,022,993 in dividends to shareholders in 1930.

The productivity of those who are engaged in the rendering of professional and personal services is extremely difficult to measure, especially as most professional men are "workers on own account", regarding whose incomes there is no census information.

The only general way of measuring the productivity of the professional and personal service class is through their earnings, which are secured only from wage-earners. Thus in one great profession, that of school teachers, practically all those engaged are wage-earners in the sense in which that term is used in the decennial census to include all salaried persons. In this profession, 15,433 male teachers and 52,899 female teachers who reported their earnings to the census enumerators in 1931, earned an aggregate of \$72,902,100 in the twelve months ended May, 1931.

Taking the whole of the service group as recorded at the census, other than those engaged in custom and repair work, whose product has been dealt with previously, and assuming that those who were not wage-earners earned only as much in the twelve months ended May 1931 as the reporting wage-earners, we find that 314,283 males in this group earned \$378,431,123 and that 370,931 females earned \$190,754,328, being a total of \$569,185,451, while the total for the calendar year 1930, when employment was more active, would have been at least \$600,000,000. It may be pointed out that this total is considered to be on the conservative side inasmuch as many professional men who are employers or workers on own account earn large incomes.

The aggregates for the gross production of the various industries not concerned with the production of form utilities and whose production is therefore not included in the regular annual Survey of Production is therefore approximately as follows:

	\$
Transportation and Communications	690,000,000
Wholesale and Retail Trade	1,000,000,000
Finance	200,000,000
Professional and Personal Service	600,000,000
T O T A L	<u>2,490,000,000</u>

This total, however, includes considerable duplication, especially in respect of transportation and communications and trade, which in rendering their services consume a considerable part of the commodities produced by other elements in the economic life of the Dominion. Thus the steam railways consume large amounts of domestic and imported coal, and the electric railways use large amounts of power, while commercial motor transport uses up large quantities of gasoline. Again, the traders of the country and the financial institutions use fuel and light, the production of which is already allowed for in the Survey of Production. Both the transportation and the distribution industries employ some of those engaged in professional and personal service.

Apart from the earnings of professional and personal service employees, the total gross amount of production of transportation and communications enterprises, trading establishments and financial institutions is estimated above at \$1,890,000,000, while a net production of \$1,300,000,000 in these industries plus the \$600,000,000 referred to above as the earnings of those engaged in professional and personal service would be more than sufficient to justify the estimate already made of \$1,872,000,000 as the net production of that part of the gainfully occupied population of Canada whose production is not allowed for in the annual Survey of Production. It is felt that the deduction of \$590,000,000 is more than ample to cover the difference between the gross and the net production of these industries.

Therefore the above estimate of \$4,992,000,000 or in round figures \$5,000,000,000 is considered to be a too conservative estimate of the net recorded national production of Canada in the year 1930. It is more probable that the recorded value of production was \$100,000,000 larger at \$5,100,000,000. It is possible that some deduction should be made from this for depreciation of productive equipment, but this deduction is offset by the fact that in broad practice of this kind, depreciation is already allowed for by the day to day consumption of materials on maintenance. Further, it has to be remembered that the whole estimate of recorded income makes no allowance

for the raising of garden produce, poultry, etc. in the spare time of householders^x and for casual earnings never recorded. Again, it makes no allowance for the difference between the producer's price of farm commodities and the price actually received by the farmer who brings in his produce to a farmers' market or peddles it along city streets or sells it to a peddler with no fixed store who undertakes to do the peddling for him. Such allowances would amount to at least \$100,000,000, making a grand total of \$5,200,000,000 as compared with the \$5,150,000,000 previously estimated in the "General Survey of Production".

From this production, however, there has to be deducted the approximately \$185,000,000 net balance of interest payments due to outsiders. Thus the spendable income of Canadians in 1930, as based upon their production of commodities during that year, would be in the neighbourhood of \$5,000,000,000.

The amount of estimate that is necessary in even the best and most accurate estimates of national income makes it desirable to secure evidence on this point from as many angles as possible, while the increasing amount of information available from the larger volume of statistics that are now being collected makes it possible to arrive at a closer approximation than in the past. Thus in Canada advantage was taken of the decennial census of 1931 to secure two important and comprehensive sets of figures having a bearing upon the national income of Canada and the purposes for which it was expended. Firstly, arising out of the census of 1931 there was a Census of Distribution, in which figures were compiled showing the aggregate amount of retail sales for all retail stores and service establishments of the Dominion in the calendar year 1930, these retail sales being the same thing as the retail purchases of the general population. Secondly, figures were compiled showing the earnings of almost all the gainfully employed wage-earners of the Dominion in the twelve months prior to the official date of the census, viz., June 1, 1931, thus including the last seven months of 1930 and the first five months of 1931. These earnings, constituting a larger sample of the national income than samples upon which estimates of the national income in other countries have been primarily based, were obtained directly from some two million and a half wage-earners in Canada themselves and are here used to check up on other estimates, the only disadvantage of this procedure being that the twelve month period included is rather more than half in 1930 and rather less than half in 1931.

The significance of these two series of statistics in establishing an approximate figure for the national income of Canada in 1930 is considered in the following pages.

NATIONAL INCOME AS ARRIVED AT FROM RETAIL SALES

In any advanced industrial country where division of labour is the rule and a money economy prevails, the larger part of the national income of the people is spent in the purchase of commodities at retail for consumption by the purchaser. Such purchases, from the point of the seller, constitute "retail sales", and may conceivably be recorded as they pass from the hands of the seller into those of the ultimate consumer. Where they are recorded, as in Canada and the United States, the total amount of recorded retail sales, and the fluctuations in those sales, throw a great deal of light upon the amount of the national income and the commodities upon which the greater part of it is ordinarily spent.

^xThe value of farm products raised elsewhere than on farms and therefore not included under agricultural production was secured at the decennial census for the year 1930 and is as follows: vegetables, \$5,793,582, orchard fruits \$642,624, grapes and small fruits \$656,539, greenhouse and hothouse products \$1,632,714, animal products, \$10,063,142. The total was therefore \$18,788,601.

Retail sales, of course, cannot be perfectly recorded, and it must be remembered that the recorded sales of most commodities do not constitute 100 per cent of the consumption of those commodities. For in many cases commodities, especially food commodities, are consumed by the producer and his family, and are never sold at all. Again, food commodities in particular, but certain others as well, are often sold directly by the producer to the ultimate consumer, and thus never pass through the merchandising process, and are therefore not recorded. Thus in most towns and cities there is a farmers' market, where producers and consumers meet and transact purchases and sales which are never recorded. Or again, producers may peddle their wares through the streets to consumers, or may sell their products to professional peddlers who may carry on their peddling without having any fixed place of business or making any collectable record of their sales. Thus the grand total of all retail sales in the country must be substantially larger than the total of which it has been possible to secure a record. Nevertheless, if the record of retail sales is more than 90 per cent of the total, as is believed, such a record throws a great deal of light both upon the total amount of the national income and upon the objects for which it is spent.

International comparisons are particularly enlightening in this field. Where two countries are at a similar stage of progress and have a similar standard of living, the retail sales are likely to bear approximately the same proportion to the total national income in the one country as in the other, and we can thus use retail sales, if we know them, as a guide to the national income in the second country, provided that both retail sales and national income are approximately known in the first.

Now Canada and the United States are, generally speaking, in somewhat the same stage of economic advancement and have among the masses of their population a rather similar standard of living. There is, however, this main point of difference between the two countries, that in Canada, the newer country of the two, there is a considerably larger part of the population that in large measure produces the commodities which it consumes, commodities which, of course, enter into the "real" national income of the Dominion but are never bought or paid for in money at all, being either consumed by the producers or bartered by them for other products which they require. Thus it is highly improbable that retail sales in Canada should bear quite as high a proportion to total national income as they do in the United States.

The chief disturbing factor in this comparison is the proportionately larger farm population of Canada, which produces very largely for its own consumption. In 1931 that farm population was 3,289,507, or 31.7 per cent of the total population of the Dominion, or nearly one-third. In the United States, however, only 24.8 per cent of the total, or 30,445,350, lived on farms in 1930. Again, rural residents other than farmers often produce for their own consumption or buy from their neighbours goods which are never recorded by any retail trader among his sales. All this happens to a greater extent in Canada than in the United States, because a larger proportion of the population of Canada is resident on farms and in small villages where everyone knows everyone else and buys many things, chiefly foods, from his neighbours directly rather than through the retail trader. Nevertheless, there is a fairly good parallel between the two countries so that we can apply in a rough way to Canada certain conclusions that have been reached in the United States, making allowance, however, for the smaller proportion of retail trade to national income.

Now in connection with the last decennial census of the United States in 1930, it was decided to take a special census of trade. That census showed a total reported amount of retail sales by retail stores included in the retail census in the United States in 1929 aggregating \$49,114,654,000. In the same year, according to the best available estimate, which is that of the National Bureau of Economic Research, the total national income paid out in the United States was \$81,136 millions. This would indicate that the percentage of total national income that was paid out to retail stores

for commodities at retail was 60.5, or slightly over three-fifths. If other recorded retail sales by milk-dealers, by manufacturers and wholesalers to consumers, together with sales of meals in hotel dining rooms, were included, the grand total of recorded sales in the United States in 1929 was \$52,718,288,000, or practically 65 per cent of the paid out national income, as estimated by the National Bureau of Economic Research.

In Canada a census of trading establishments was taken in connection with the decennial census of 1931. This census, which was taken for 1930, included wholesale trade, retail trade and retail service, the last of which was not included in the United States census. However, taking the retail trade alone, in which the two censuses covered approximately the same classes of establishments, the grand total of retail sales by retail stores was \$2,753,392,900, this figure of course being substantially lower in 1930, a year of diminishing trade and declining prices, than it would have been in 1929. In addition to the figure for retail sales of retail stores, retail service establishments such as barber shops, shoe-shine parlours, theatres, etc., received from the public \$248,555,900 during 1930. In addition, dairies and bakeries reporting to the Census of Industry sold at retail to the public goods to the value of \$28,919,290 and \$51,604,889 respectively. The grand total of retail trade in Canada in 1930 was approximately \$3,225,800,000 as follows:-

TOTAL RETAIL SALES IN CANADA, 1930.

<u>Nature of the Business</u>	<u>Total Retail Sales in 1930</u>
	\$
Retail merchandise stores	2,753,319,900
Retail service establishments	248,555,900
Sales of meals in hotels	28,124,800
Sales of beer and wine in hotels	23,942,457
Miscellaneous receipts in hotels	8,298,587
Retail sales by manufacturing bakeries	51,604,889
Retail sales by manufacturing dairies	28,919,290
Direct sales to consumers by other manufacturers (exclusive of sales through retail branches), (estimated)	65,504,406
Retail sales by co-operative associations (other than co- operative stores)	5,326,415
Value of materials included in contracts for domestic plumbing, heating and electrical work (estimated)	12,000,000
T O T A L	<u>3,225,596,052</u>

The chief apparent dissimilarity between United States recorded retail sales of commodities in 1929 and Canadian recorded retail sales of commodities in 1930 occurs in the automotive group. In 1929 a very large number of United States people were investing the profits which they had made during the boom period in automobiles, with the result that the recorded retail sales of the automotive group in that year attained the enormous figure of \$9,615,810,000 as compared with \$10,837,422,000 of recorded retail sales in the food group. Thus the people of the United States, taken as a whole, spent in 1929 \$8 on automobiles for every \$9 that they spent for food, which is surely an abnormal situation. By 1930, when Canada took her census of distribution, the depression was already a factor in the situation, with the result that the recorded sales of the automotive group in Canada in that year were only about 61.9 per cent of the sales in the food group, or \$381,959,300 as compared with \$615,476,100.

Thus in making retail sales a test of total national income in the two countries in two such psychologically different years as 1929 and 1930, it has seemed advisable to eliminate the automotive group from consideration and to take for both countries the recorded retail sales less sales in the automotive group. In doing so, we find that recorded United States retail store sales other than those in the automotive group amounted in 1929 to \$39,498,843,000, being 48.7 per cent of the United States national income of \$81,136,000,000 paid out in 1929, as estimated by the National Bureau of Economic Research. Similarly, taking the total Canadian recorded retail store sales of commodities in 1930 of \$2,753,319,900, and subtracting the recorded retail sales of the automotive group amounting to \$381,959,300, we have all remaining recorded retail sales as \$2,371,360,600. If this amount could be accepted as being approximately 48.7 per cent of the Canadian national income paid out in 1930 -- that is, the same percentage as the \$39,498,843,000 is of the \$81,136,000,000 -- then the total of that national income available for spending would have been about \$4,869,300,000, or in round figures, \$4,870,000,000. But this figure must be less than the truth for Canada, because of the much larger proportion of people who live "of their own" here than in the United States. This indicates that the net national income of Canada in 1930 reached in round figures \$5,000,000,000.

There is, however, another consideration to be taken account of in this comparison. In so far as Canadian dollars went out of the country to pay interest due to external holders of bonds or external shareholders, they would not enter into the income available for home spending at all. Now it is estimated in the Bureau's balance of international payments that a net amount of something like \$184,000,000 was paid out from this country to those living outside it in interest and dividends in the year 1930. Such interest payments, while they would be no part of the national income available for retail expenditures, would come out of the national production and would indicate that the gross national production of 1930 must have reached something like \$5,200,000,000. This figure may be compared with the previously published estimate of \$5,150,000,000 as the value of all Canadian production in 1930.

On the assumption that the total of the national income of Canada spendable in Canada in 1930 was \$5,000,000,000, combined with the fact that total Canadian retail purchases in 1930 were \$3,225,000,000, there is left to be accounted for the use of some \$1,775,000,000 of the national income. The use of this enormous amount of money is to be accounted for as far as possible on the basis of the ways in which money is spent by the ultimate consumer whether he be an individual or a corporation. It is from this point of view that the matter must now be considered.

Unquestionably, the largest class of expenditures made by individuals and corporations in Canada other than retail purchases are the expenditures for governmental purposes, namely, taxes and other payments to Dominion, provincial and municipal authorities. So far as the revenue of the Dominion goes, most of the taxation revenue is levied on goods so that it is directly included in the retail purchases already considered. However, the citizens of Canada, individuals and corporations, paid to the Dominion Government an income tax of \$61,254,000 on their 1930 income as a direct tax. In addition, they paid to the Dominion Government in the fiscal year ended March, 1931, -- that is, in the fiscal year most closely corresponding to the calendar year 1930 -- a gross amount of about \$37,467,000 for the services of the Postal Department, of which a comparatively small part would be reflected in retail sales of commodities. On the whole, it appears that the Dominion Government received from its citizens \$100,000,000 in direct taxation or as a voluntary payment for services rendered to them.

As for the provincial governments, these received in their fiscal years ended in 1930 aggregate payments of \$26,553,000 proceeding from the taxation of corporations, land, etc., \$20,297,000 in succession duties, \$20,321,000 in taxation of motor

vehicles, \$4,471,000 in taxation of amusement and race track meetings, these items of taxation aggregating almost \$72,000,000, while legal fees and court fines aggregated \$7,327,000, revenue from public utilities and enterprises \$4,375,000, forests, timber and woods \$10,578,000 and mines and mining \$3,379,000. These four items amounted to \$25,659,000. Thus the total amount paid by the citizens of Canada to the governments of the provinces, either in taxation or for services rendered, amounted in 1930 to about \$98,000,000. This, of course, is exclusive of the revenues from the gasoline tax and from liquor traffic control, which are already included in retail sales.

However, the largest sums paid in taxation and for services rendered by the citizens of Canada to their governments and not entering directly into retail sales are those paid to the municipalities. Practically the whole revenue of municipalities in Canada comes from the citizens either in taxation or in licenses, fees, and other payments for services rendered, and these revenues totalled \$375,000,000 in 1930 as indicated in the following table:

Revenues of Municipalities, by Provinces, 1930.

	\$
Prince Edward Island ^{1/}	241,054
Nova Scotia	13,134,823
New Brunswick ^{2/}	4,344,049
Quebec (including school corporations)	83,284,830
Ontario	170,542,962
Manitoba ^{3/}	19,322,697
Saskatchewan	27,711,593
Alberta	28,050,371
British Columbia	28,285,789
T O T A L	<u>374,918,168</u>

1/ City of Charlottetown only.

2/ Cities of Saint John and Moncton only.

3/ \$19,322,697 tax imposition in Manitoba. Receipts not shown.

Thus the citizens of Canada in their individual or their corporate capacity paid out in the year 1930 some \$575,000,000 to their Dominion, provincial and municipal authorities in taxes and other payments of a kind not directly included in the enhanced prices of commodities and thus in the price of retail purchases.

Insurance of one kind or another was the purpose for which the next largest series of payments were made by Canadian individuals or corporations out of their incomes. The total recorded payments for life insurance in 1930 were \$229,535,000 according to the records of the Dominion Department of Insurance. The total recorded payments for fire insurance in the same year were \$58,504,000, and for insurance other than fire and life \$45,330,000. Besides this there were payments of probably some \$7,000,000 or \$8,000,000 on over one billion dollars worth of fire insurance carried on property in Canada by companies, associations or underwriters not licensed to transact business in Canada. These figures add up to over \$340,000,000, while in the same year the Annuities Branch of the Department of Labour, which operates practically as an insurance company, took in \$4,597,000 in payments for immediate or deferred annuities. It is probable that the grand total of payments made by the people of Canada in 1930 for insurance purposes of one kind and another reached \$350,000,000.

Perhaps the next largest item of expenditure by the average citizen is that involved in the maintenance of the learned professions, including religion, medicine and nursing, and law, as well as private expenditures on education such as are involved in sending young people away from home to school or university.

As for religion, we know that in 1930 the United Church received in contributions \$16,832,000, the Presbyterian Church \$4,468,000 and the Baptist Church \$2,159,000, a total of \$23,458,000 for these three denominations. Since these three bodies contain among them nearly one-third of the population, it may be estimated that the grand total expenditures of the people of Canada for religious purposes are at least \$70,000,000. Indeed they may be in the neighbourhood of \$75,000,000 in view of the special position of the Roman Catholic Church in the province of Quebec. In addition to this figure of \$75,000,000, it is probable that the contributions for semi-religious institutions such as the Y.M.C.A., Red Cross, community services generally and for private charity, would bring the total up to \$100,000,000.

The medical health service of the country employed in 1931, 24,153 males and 44,274 females. Of the males, 9,777 were wage-earners who reported earnings of \$10,679,000, while 26,324 of the females earned \$13,869,800. Comparatively few of the 10,000 physicians and surgeons and of the 4,000 dentists were wage-earners, so that it is unsafe to use their earnings as a basis for a general estimate. At the comparatively low rate of \$4,000 a year the gross receipts of the 10,000 doctors, physicians and surgeons would amount to \$40,000,000, while the 4,000 dentists, whose net earnings are probably lower but whose gross receipts would probably average as high, would receive \$16,000,000. Then there were 869 opticians, 542 chiropractors, 20,441 graduate nurses, 11,462 nurses in training, 1,046 veterinary surgeons and 1,425 health professionals. Graduate nurses who were wage-earners averaged \$914 in earnings in the census year 1931, at which rate their total earnings would have been \$18,683,000, while the amount involved in the maintenance and allowances to nurses in training would bring the total paid out to the nursing profession to at least \$25,000,000. It would appear therefore that the payments to the whole of the body of those whose activities are concerned with the maintenance or restoration of health would be in the neighbourhood of \$100,000,000. Further the fees paid by patients in hospitals other than mental amounted to \$16,096,600 in 1931 and the fees paid by paying patients in mental hospitals in 1930 amounted to \$1,775,000. In connection with these figures it should be remembered that the bulk of the cost of construction and maintenance of hospitals is paid out of taxation.

The third important service is that of the law. In Canada in 1931 there were 14,922 persons engaged in the law, 8,597 males and 6,325 females. There were 8,060 lawyers and notaries and 544 justices and magistrates, the latter receiving their incomes mainly out of public funds. While some of the lawyers are also in the category of civil servants paid out of taxes, probably 90 per cent are in business on their own account, and on a fair estimate it would appear that the citizens and the corporations of Canada must pay in the aggregate something like \$30,000,000 a year for private legal service in addition to the amounts paid for legal fees that go to public authorities.

The main cost of education in Canada is, of course, met out of public funds. However, in addition to the public expenditures there are very considerable annual expenditures coming out of private incomes. While private expenditures for elementary education are comparatively small, and are included in the retail price of books and other commodities included in retail sales, yet secondary education very often involves a pupil leaving home and going to a nearby town where a high school is located, this involving board and lodging and perhaps a payment of fees. Again, some part of elementary education and a considerable part of secondary education are supplied by private schools charging ordinarily quite considerable fees and also supplying board and lodging to large numbers of those attending them. Together with these there are amounts

paid in fees to private business colleges and in some cases the board and lodging of their pupils resident away from home. The largest factor in private expenditures for education is, however, by the fees of the universities and colleges and the maintenance of students at these institutions. In 1930-31 there were altogether in Canada 77,618 students in attendance at universities and colleges, 41,168 of these being of university grade. These students were enrolled in 153 different colleges or universities. Partial records of receipts of fees by such universities and colleges from these amount to \$3,655,935, many universities and colleges not giving reports under this heading. Together with this, the reporting colleges and universities received \$7,061,873 from other sources, these amounts being mainly paid for board and lodging, though many of these colleges and universities were able to provide residential accommodation for only a small fraction of their students many of whom, of course, normally live in the communities where these institutions are located, though the bulk of non-resident students live in boarding houses. Together with these may be classed some 8,000 students in normal schools who, in the majority of cases, have to provide for their own board and lodging. Altogether, and taking the private schools into account, it would appear that private expenditures for educational purposes in Canada can hardly be less than \$50,000,000.

Still other objects of private expenditure in this country are telephones and electrical service. In 1930 there were over 1,000,000 telephones used primarily for domestic purposes in urban and rural communities, involving payments of probably \$30,000,000 by private persons to telephone organizations. In the same year the people of Ontario alone paid \$10,543,000 for their domestic electrical service, the corresponding figure for the Dominion being in the neighbourhood of \$35,000,000.

In addition to all these payments that have been mentioned above, there must be an allowance for the value of commodities, more particularly food commodities, produced by the farmer or possibly the fisherman, and consumed in the producer's family or sold by him to the consumer direct without passing through any recognized channel of retail trade. In view of the fact that in 1931 over 3,000,000 people actually lived on the farms of Canada and very largely produced their own food, it seems reasonable to estimate the value of the commodities consumed where produced at say \$200,000,000, while the value of the commodities sold directly by the producer to the consumer and not passing into retail trade was probably an additional \$50,000,000, fish as well as farm produce being estimated to be included in these figures.

On the above basis, the expenditures of the national income of Canada in 1930 would be approximately as follows:

	\$
Retail Purchases	3,225,000,000
Taxes and other Governmental Payments not directly affecting retail prices	575,000,000
Insurance	350,000,000
Religious and charitable contributions	100,000,000
Health Service, including fees in hospitals but exclusive of Governmental payments	120,000,000
Private and Corporation Expenditure for legal services	30,000,000
Private Expenditures for Educational Purposes	50,000,000
Private Telephones	30,000,000
Private Electrical Service	35,000,000
Commodities consumed by producers or sold to consumers direct and thus not entering into retail trade	250,000,000
GRAND TOTAL	4,765,000,000

Apart from the current payments already referred to, the chief remaining purpose for which money is paid out is for construction, a part of the cost of construction being, of course, already included in sales of commodities destined to be used in construction. Indeed, new construction and insurance represent the two main methods of saving in Canada, while a good deal of the money paid in life insurance premiums finds its way into financing construction. In this connection it may be pointed out that the grand total of construction contracts awarded in Canada in 1930 amounted to no less than \$457,000,000, some 65 per cent of this amount or \$297,000,000 representing the estimated addition to the values already existing in the raw materials of construction, already accounted for in retail sales. The addition of this sum to the \$4,765,000,000 mentioned on the preceding page gives a total of \$5,062,000,000 for total disbursements of the Canadian people in 1930.

The new construction in Canada in 1930, as in other years, was largely financed by bond issues and the total of such bond issues sold in Canada in 1930 amounted to the very large figure of \$369,000,000. The sales of bonds in Canada in that year, apart from \$40,000,000 of Dominion bonds sold to Canadian banks, were divided as follows: \$84,255,000 of provincial bonds; \$86,558,000 of municipal bonds; \$150,055,000 of corporation bonds; and \$8,000,000 of railway bonds. How much of these bond issues went into new construction, it is not possible to determine, but it seems likely that the great bulk of the corporation and railway bonds and a large portion of the provincial and municipal bonds went for new construction of one kind or another. When their figure is added to the \$4,765,000,000 and allowance is made for the residential construction not reflected in bond issues, it would seem that the disposition of the total income of \$5,000,000,000 of 1930 is fairly well explained.

Of course there are minor items not here allowed for and on the other hand there are some duplications between retail sales and other objects of expenditure, but care has been taken to reduce these to the minimum and it is considered that they do not materially affect the situation. It would appear therefore that this calculation of the amounts spent in Canada for different purposes tends to corroborate the evidence previously presented as to the value of production in that year.

THE NATIONAL INCOME OF CANADA IN THE CENSUS YEAR ENDED MAY 31, 1931,
AS ESTIMATED FROM EARNINGS REPORTED BY WAGE EARNERS.

The total national income of any civilized people may be most generally divided into two great classes. The first of these is income arising out of the personal effort of the individual, whether in ordinary labour or in the organization of the labour of others -- in economic parlance, the work of the wage-earner or of the entrepreneur. The second is that which arises out of the ownership of property, whether that property is a natural resource or something created by human effort. These two kinds of income are known as earned or "service income" and unearned or "property income", respectively. Of these two elements in the national income, service income is by far the larger, being generally estimated at about three-quarters of the total. Now in the census of Canada in 1931 a very large sample of this service income was secured from the statements of wage-earners to the census enumerators with regard to their earnings in the twelve months preceding the date of the census. The male wage-earners supplying such statements constituted nearly three-fifths of all the gainfully occupied males of the Dominion, while the female wage-earners were four-fifths of the total number of gainfully occupied females. On the basis of this enormous sample of the earnings of all gainfully occupied Canadians, there has been prepared the following estimate of the national income in the twelve months ended May 31, 1931.

THE EARNED OR "SERVICE" INCOME OF GAINFULLY OCCUPIED CANADIANS IN THE CENSUS YEAR.

At the census of 1931, there were in the nine provinces of Canada -- that is, in the Dominion less the Yukon and the North West Territories -- 3,261,563 males and 666,094 females who reported that they were gainfully occupied. Included among these, a grand total of 1,948,500 wage-earning males and 528,538 wage-earning females who had recorded themselves as gainfully employed, reported aggregate earnings of \$1,806,633,400 and \$296,244,000 respectively in the twelve months prior to the census -- that is, in the period from June 1, 1930 to May 31, 1931.

For the purposes of the present study, it is proposed, in estimating total earned incomes, to assume firstly that the comparatively few wage-earners who were unable to make a statement of their earnings had on the average the same earnings as those who did report them and secondly that the other classes of gainfully occupied Canadians, namely, employers, workers on own account and "unpaid family workers", who in the great majority of cases were farmers' sons who may be regarded as serving an apprenticeship to an occupation, by and large received as much in wages or salaries as the wage-earning class, the larger amounts presumably received by "employers" offsetting the lower earnings of the "unpaid family workers" who usually receive at least board, lodging and pocket-money.

However, since rates of earnings vary very considerably throughout the far-stretching provinces of Canada, it was thought that instead of applying one average wage rate to all gainfully occupied males and one average wage rate to all gainfully occupied females throughout the country, it would be better to apply the average wage earned by reporting wage-earning male and female workers respectively in each province to all gainfully occupied male and female persons in that province and then to add the totals for the nine provinces. When this was done, it was found that on this basis the total earnings or, if the expression is preferred, the total "effort income" of all gainfully occupied Canadians of the nine provinces in the twelve months preceding the census was for males \$2,989,307,191 and for females \$371,677,296, being a total of \$3,360,984,487, or in round figures \$3,361,000,000. To this figure should be added a sum of say \$5,000,000, representing the earnings of the gainfully occupied persons in the Yukon and the North West Territories, not included in the previous calculations. This would bring the grand total "effort" income of the people of Canada in the twelve months prior to the census to \$3,366,000,000.

Of course this figure of \$3,366,000,000 is not to be regarded as mathematically exact. It contains a margin of error. In the first place, it is an assumption that the non-wage earners, male and female, earn only the same amount per head as the wage-earners, though it should be remembered that the non-wage earners include a very large number of "unpaid family workers", who receive only board and lodging and that the wage-earners, as defined in the census, include cabinet ministers and general managers of banks. It may be observed, however, that the reporting male wage-earners included 59.71 per cent of all gainfully occupied males in Canada and that the reporting female wage-earners included 79.35 per cent of all gainfully occupied women in Canada. Thus we have included in the case of the male wage-earners almost three-fifths of all males deriving an income from personal effort, and in the case of the female wage-earners almost four-fifths of all females deriving an income from personal effort, so that the margin of error involved in assuming that the "effort" income of other gainfully occupied persons is equal to that of wage-earners is likely to be comparatively small.

It is, however, highly probable that this calculation under-estimates the total personal service or "effort" income of Canadians in the period in question, mainly for the reason that wage-earners, in reporting their earnings, do not take account of minor casual earnings received in money or of other income due to their personal effort where such income is received in kind and not in money. Thus a wage-earner who in his

spare time raises his own garden produce or produces his own eggs and chickens, does not include the market value of these products in his earnings, although such value constitutes a part of his real "effort" income and therefore of the real national "effort" income. There is no doubt that an addition should be made to the personal service or "effort" income of both the wage-earners and the other gainfully occupied Canadians on this score, and such addition can hardly be placed at less than \$25 per head of all gainfully occupied Canadians, or a total of \$98,291,425. On this basis, the total "effort income" of the gainfully occupied Canadians would have amounted to \$3,459,000,000, or if the Yukon and the North West Territories be included, \$3,464,000,000. This flat addition of nearly \$100,000,000 might also be taken to include any allowance that should be made for the "effort" income of non-"gainfully-occupied" persons such as school children, and of high school and college students in their vacations and spare time, and it is considered that, by and large, this allowance for unreported earnings is very moderate. In accordance with general practice in this connection, no allowance is made for services of housewives, etc. The details are given in the following table.

TOTAL EARNINGS OR "EFFORT INCOME" OF ALL GAINFULLY OCCUPIED PERSONS,
BY PROVINCES, 1931.

		Gainfully Occupied Persons	Average Wage	Total Earnings	Allowance of \$25 per capita for unrecorded earnings	Grand Total Earnings
		No.	\$	\$	\$	\$
P.E.I.	Males	27,818	676.92	18,830,644	695,450	19,526,094
	Females	4,348	361.10	1,570,050	108,700	1,678,750
	Total	32,166	634.23	20,400,694	804,150	21,204,844
N.S.	Males	153,141	763.24	116,883,337	3,828,525	120,711,862
	Females	27,944	429.86	12,012,410	698,600	12,711,010
	Total	181,085	711.80	128,895,747	4,527,125	133,422,872
N.B.	Males	117,947	754.07	88,940,648	2,948,675	91,889,323
	Females	22,074	436.31	9,631,107	551,850	10,182,957
	Total	140,021	703.98	98,571,755	3,500,525	102,072,280
Que.	Males	823,332	926.46	762,782,518	20,583,300	783,365,818
	Females	202,533	479.37	97,088,244	5,063,325	102,151,569
	Total	1,025,865	838.19	859,870,762	25,646,625	885,517,387
Ont.	Males	1,096,844	1,005.86	1,103,267,118	27,421,100	1,130,688,218
	Females	249,565	638.11	159,250,061	6,239,125	165,489,186
	Total	1,346,409	937.69	1,262,517,179	33,660,225	1,296,177,404
Man.	Males	225,770	927.12	209,316,584	5,644,250	214,960,834
	Females	44,927	559.19	25,122,594	1,123,175	26,245,769
	Total	270,697	866.06	234,439,178	6,767,425	241,206,603
Sask.	Males	301,417	761.33	229,478,407	7,535,425	237,013,832
	Females	37,509	525.05	19,694,138	937,725	20,631,863
	Total	338,926	735.18	249,172,545	8,473,150	257,645,695

TOTAL EARNINGS OR "EFFORT INCOME" OF ALL GAINFULLY OCCUPIED PERSONS,
BY PROVINCES, 1931 - Concluded.

		Gainfully Occupied Persons	Average Wage	Total Earnings	Allowance of \$25 per capita for unrecorded earnings	Grand Total Earnings
		No.	\$	\$	\$	\$
Alta.	Males	252,792	888.05	224,491,430	6,319,800	230,811,230
	Females	33,426	597.31	19,965,684	835,650	20,801,334
	Total	286,218	854.09	244,457,114	7,155,450	251,612,564
B.C.	Males	262,502	896.44	235,316,505	6,562,550	241,879,055
	Females	43,768	624.73	27,343,008	1,094,200	28,437,208
	Total	306,270	857.61	262,659,513	7,656,750	270,316,263
Canada ^x	Males	3,261,563	916.53	2,989,307,191	81,539,075	3,070,846,266
	Females	666,094	557.10	371,677,296	16,652,350	388,329,646
	Total	3,927,657	855.72	3,360,984,487	98,191,425	3,459,175,912

^xFigures for Canada are exclusive of earnings of gainfully occupied persons in the Yukon and the Northwest Territories, which would raise the grand total to \$3,464,000,000.

THE PROPERTY INCOME OF CANADIANS

As for property income, no comprehensive study of Canadian property income has ever been made, though certain elements entering into property income are known. Therefore, as a first step toward estimating property income, we take the figures for the United States for 1910 compiled by Professor W. I. King, who estimates that 25.6 per cent of the aggregate national income of that country in 1910 was "property income" as distinguished from "service income", and use this same percentage for Canada.⁴ As against this procedure, it might be claimed that property income in Canada is probably not so large in proportion to total income as in the United States, owing to the country being less developed. However, the average rate of earnings on property is undoubtedly higher in Canada than in the United States, and this consideration may be considered as offsetting the other. At any rate, this proportion is adopted in the present study, and on the basis of the foregoing it is estimated that the total "property" income in Canada in the twelve months preceding the census of 1931 was 256/744 or 32/93 of the "personal service" or "effort" income. This would bring the total property income of the Dominion for that period to \$1,192,000,000. This would include the "property income" of governments as well as individuals.

Then, taking the "effort" income and the property income together, there is disclosed a grand total national income of \$4,656,429,989 for the twelve months preceding the census. In view of the generally and continuously declining production and

⁴ This particular method is no longer used in the United States, 1910 being the latest estimate available on this basis. However, it is probable that Canadian conditions in 1931 approximated more nearly to United States conditions of 1910 than to those of the United States at the present.

prices of the years 1930 and 1931, it may be added that this figure would undoubtedly be lower than the national income for the calendar year 1930, but undoubtedly higher than the national income for the calendar year 1931. It is rather unfortunate, though unavoidable, that the period under observation includes seven months of 1930 and five of 1931, while other relevant statistics such as production statistics and retail trade statistics are for the calendar years. Nevertheless, the conclusion is that the national income of Canada in the twelve months prior to June 1, 1931, including seven months of 1930 and five of 1931, was approximately \$4,656,000,000, of which \$3,460,000,000 was "effort" income and \$1,190,000,000 "property" income. It is understood that this figure is a net figure exclusive of provision required for maintaining the productive equipment of the Dominion.

The "property" income of Canada in the census year, as just estimated, is approximately 4 per cent of the total national wealth, according to the latest estimate for 1929. This may seem a low return, but it is in harmony with the known facts of the situation that the "property" income as well as the service income of the people should have declined substantially between 1929 and 1931. Further, the fact that the average number of weeks worked by male wage-earners was only 41.12 and by female wage-earners 46.59 in the twelve months ended May 31, 1931, together with the known reductions in wage-rates subsequent to 1929, explains a considerable decrease in the "effort" income of the people. It would appear from the available evidence of production figures that the "effort" income of the Canadian people was at least \$4,500,000,000 in 1928 and 1929, which with a property income of approximately \$1,500,000,000 made up a grand total income of approximately \$6,000,000,000, the 1928 figure being raised by the record crops of that year.

The "effort" income, of course, practically all goes to residents of Canada, whose physical presence in the country is required in order to earn their income. There may, indeed, be slight discrepancies arising out of the fact that certain workers reside in Canada but work in the United States, while others reside in the United States and work in Canada. Probably, by and large, the earnings of these two classes may cancel out.

The case is different with "property" income. Here the data of the Bureau show that on January 1, 1931, the total investments of outsiders in Canada aggregated \$6,477,879,000, while the total investments of Canadians outside the Dominion aggregated only \$1,831,310,000. This means a net external indebtedness of \$4,646,569,000, and a probable annual net outgo for interest and dividends of 4 per cent of this amount, or \$185,862,760, many dividend payments being doubtless reduced or suspended altogether in the period covered in this study.^x

It would appear, therefore, that of the \$4,650,000,000 national income realized in the twelve months prior to June 1, 1931, a net sum of some \$185,000,000 had to be paid out in interest and dividends on net outside capital invested in Canada, so that the net national income available to residents of Canada would be reduced to \$3,466,000,000 of "effort" income and \$1,007,000,000 of "property" income in the twelve months covered, or a total of \$4,473,000,000. This estimate errs, if at all, on the side of conservatism, in view of the fact that the gainfully occupied other than wage-earners probably earn on the average rather more than the wage-earners.

^xIt may be noted that an independent calculation of the Balance of Payments made by the Internal Trade Branch of this Bureau gives interest payments in the calendar year 1931 as \$252,076,000, partly offset by interest receipts of \$70,722,000, or a net balance of payments of \$181,354,000. The corresponding figure for the calendar year 1930 was \$184,366,000.

It is not at all remarkable that the national income should have been much less in the twelve months prior to the census than in the calendar year 1930. Owing partly to lower prices and partly to a lessened physical volume of production, the estimate previously published in the Survey of Production 1931 shows a total reduction in value of production for 1931 as compared with 1930 of no less than \$1,150,000,000 or at the rate of nearly \$100,000,000 per month. Thus it is quite in keeping that the production in a period which included the first five months of 1931 and excluded the first five months of 1930 should be from \$450,000,000 to \$500,000,000 less than the figures for the calendar year 1930.

SUMMARY OF STATISTICS OF NATIONAL INCOME 1930 ARRIVED AT FROM THREE ANGLES

(1) Production

Grand Total Net Production in Canada 1930	\$5,200,000,000
Deduct Net Interest and Dividend Payments Outside of Canada	\$ 184,000,000
National Income Spendable in Canada	\$5,016,000,000

(2) Retail Sales

National Income as Estimated from Retail Sales, 1930.

Spendings of \$2,371,360,600 at retail stores other than those in the automotive group are 48.7 per cent of national income, according to United States experience in their census of distribution for 1929 as compared with their estimated national income in that year.

Then the Canadian National income in 1930 is 1000/487ths of \$2,371,360,600 of spendings at retail stores other than those in the automotive group, or \$4,869,300,000, if the same proportion prevailed as in the United States. But as Canada has a considerably larger proportion of people who live largely on their own products like farmers and fishermen, it is probable that her national spendings for current or investment purposes in 1930 reached \$5,000,000,000.

(3) Earnings

National Income in 1930 as based on Figures of Earnings in Census Year ended May 31, 1931.

Service or Effort Income of Canadians in Census year ended May 31, 1931 (estimated on basis of Earnings of Wage Earners)	\$3,465,000,000
Property Income (estimated on basis of King's figures for United States)	\$1,192,000,000
Total Income	\$4,656,000,000
Less net Property Income Payable to Outsiders	\$ 184,000,000
Net National Income in Census Year	\$4,472,000,000
Probable Excess in National Income first five months of 1930 over first five months of 1931 ^x	\$ 480,000,000
Estimates Total National Income 1930	\$4,952,000,000

^xSee Footnote on page 28.

Therefore, the probable national income of 1930 as estimated back from the foregoing figures for the twelve months ended May 31, 1931, would be \$4,952,000,000. The somewhat lower total in this estimate would indicate that the assumption that other gainfully occupied Canadians earn only as much as wage-earners, has a tendency to reduce our national income unduly. The difficulty on the basis of existing information is to make any other assumption.

Conclusion.- Thus, these three estimates, two of which are based in part on United States statistics, would indicate that the national income of Canada in 1930, after making provision for net interest and dividend payments outside of the country, was approximately \$5,000,000,000. It is considered that the maximum error in this estimate is not more than 2 per cent.

^xIn the twelve months of 1931 the aggregate production of commodities as given in the Bureau's Annual Survey of Production was \$1,150 million less than in the same period of 1930. On the same basis, the first five months of 1931, owing to lower production and lower prices, would show a production of \$480 million less than the same period of 1930. Employment figures would indicate that this assumption is reasonable.

